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REED SMITH LLP 1301 K STREET, N.W. SUITE 1100 EAST TOWER WASHINGTON, DC 20005			EXAMINER SCHNEIDER, JOSHUA D	
			ART UNIT 2182	PAPER NUMBER

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,235

Applicant(s)

BENNINGER, DAVID C.

Examiner

Joshua D. Schneider

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


DOV POPOVICI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/24/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 2, 6, 11, 18, and 19, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

3. With regards to claims 2, 6, 11, and 18, it is not found in the specification how any of the described functions are conditioning a signal. Throughout the specification a monitor, an interrupt, an interrupt on demand, an over-ride, or a pass-through function are described only through circular reasoning, and in no way make clear what operation is being done on the discrete signals. The most explicit example on this list is the pass-through function, which by definition leaves the signal unchanged, and thus by definition does not perform any conditioning operation on the discrete signal. This operation is currently performed in every electrical control system by a wire, which passes the signal from one connection point to another without changing the signal. Likewise, a monitor normally does nothing to the signal which it is monitoring, and is therefore not conditioning or performing an operation on a signal. The descriptions in the specification in paragraphs 24-26 refer to the various circuit function limitations as if they are discrete signals of their own and not function being performed on discrete signals. Finally, interrupt-on-demand is not described in the specification in any way other than listing it as a

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possible choice for a circuit. Therefore it is not found that the subject matter is described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 19 is rejected for incorporating the same subject matter as the claim on which it depends.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-17, 20, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. With regards to claims 1, 5, 10, and 20, the claims are unclear as to what the scope of signal conditioning is in light of the specification. Signal conditioning is a known term in the art, and usually includes various types of filters that remove noise from a signal and make sure the signal remains within prescribed voltage limitations. Operations to prepare an input signal for a different format of output may also be referred to as signal conditioning. In the instant application though, signal conditioning does not seem to be used in any known way. Instead, four main conditioning types are set forth, though none of them seem to be doing anything to the actual signals being conditioned. In the case of a pass through circuit, nothing is done to alter the signal. The question that follows is, if nothing is done to the signal, what is the conditioning operation doing? The operation of forming a circuit by passing a signal through unaltered is preformed in every electrical system by a wire. Similarly, a signal monitor does nothing to a signal, but rather would monitor the signal and usually provide information from the monitor to something else. In light of the forgoing, it is unclear what applicant regards as the invention and

would be limited by the claims. Dependent claims 2-4, 6-9, 11-17, and 21 are rejected for incorporating the same indefinite subject matter as the claims on which they depend.

7. With regards to claim 1, the claim includes limitations including performing various operations on a discrete. These limitations are confusing and grammatically unsound. One cannot perform any operation on an adjective. Dependent claims 2-4 are rejected for incorporating the indefinite subject matter upon which they depend.

8. With regards to claim 6, it is unclear how the circuitry could be selected "for" the group consisting of the circuits to be selected. This language seems to be a grammar error that makes the claim unclear.

9. With regards to claim 8, a claim cannot depend on itself. It is unclear what other limitations are intended to be part of this claim in light of the dependency. The word bus is also misspelled "buss."

10. With regards to claim 10, the limitation "processes a discrete" is confusing and grammatically incorrect. One cannot perform any operation on an adjective. Dependent claims 11-17 are rejected for incorporating the indefinite subject matter upon which they depend.

11. All further objections and rejections are made in light of the specification as best understood in view of the previous objections and rejections.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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13. Claim 20 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. 5,766,027 to Fogg.

14. With regards to claim 20, Fogg teaches a legacy controller comprising a circuit card assembly for conditioning discrete signals and providing conditioned discrete signals to a distributed control system (column 1, lines 38-48).

15. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. 6,392,557 to Kreuter.

16. With regards to claim 1, Kreuter teaches determining at least one conditioning operation that must be performed on a discrete (column 2, lines 9-27), manufacturing a circuit card comprising at least one circuit performing the determined conditioning operation on the discrete (column 2, line 63, through column 3, line 9), and installing the circuit card between the legacy system and the control system (column 2, line 63, through column 3, line 9).

17. With regards to claim 2, Kreuter teaches the step of determining at least one conditioning operation further comprises designating a monitor, an interrupt, an interrupt on demand, an override, or a pass-through function (column 2, line 63, through column 3, line 9).

18. With regards to claim 3, Kreuter teaches the step of installing the circuit card between the legacy system and the control system further comprising installing the circuit card in a legacy controller (column 2, line 63, through column 3, line 9).

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

20. Claims 5-8, 10, 11, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,831,926 to Kinstler.

21. With regards to claim 5, Kinstler teaches a discrete signal source that transmits discrete signals (Fig. 1, element 20), a circuit card assembly connected to the discrete signal source comprising pre-determined signal conditioning circuitry that receives the discrete signal from the discrete signal source (Fig. 1, elements 10 and 14), conditions the discrete signal with the pre-determined signal conditioning circuitry (Fig. 1, element 22, column 3, lines 25-36), and transmits a conditioned discrete signal (Fig. 1, elements 16 and 24); and a processing component, connected to said circuit card assembly, comprising hardware that receives the conditioned discrete from the circuit card assembly, and memory storing logic instructions for processing the conditioned discrete signal and generating a control function (column 3, lines 33-64).

22. With regards to claim 6, Kinstler inherently teaches that the pre-determined signal conditioning circuitry is selected for the group consisting of monitor, interrupt, interrupt on demand, over-ride, or pass-through circuits, as the voltage levels must be monitored and passed through to the micro-controller (column 3, lines 33-36).

23. With regards to claim 7, Kinstler teaches a hardware connection to the processing component, and at least one distributed controller, wherein the hardware connection receives the control function from the processing component and transmits the control output to the at least one controller (Fig. 2, elements 38, 10, and system processor connection to discrete signals by 1394 bus, column 5, lines 14-27).

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24. With regards to claim 8, Kinstler teaches wherein the hardware connection is a common bus and a hard-wired connection (column 5, lines 14-27, 1394 bus).

25. With regards to claim 10, Kinstler teaches a plurality of legacy system connections (Figs. 1 and 2, elements 10, 14, and 20), each legacy system connection receiving or transmitting discrete signals from or to a legacy system (Fig. 1, elements 10 and 14); a plurality of corresponding conditioning circuits (Fig. 1, element 22, column 3, lines 25-36), each conditioning circuit electrically joined to its corresponding legacy system connection (Fig. 1, elements 20, 14, and 22, column 3, lines 25-36), wherein said conditioning circuit processes a discrete to form a conditioned signal according to its structure (Fig. 1, element 22, column 3, lines 25-36); and a plurality of distributed system connections electronically joined to said plurality of conditioning circuits (Fig. 2, multiple elements 10, column 5, lines 14-27), wherein the discrete signal from the legacy system enters the circuit card assembly through the legacy system connection, the discrete signal is transmitted to its corresponding conditioning circuit through the legacy system connection, the conditioning circuit conditions the discrete signal according to its structure forming a conditioned signal, and the conditioned signal is transmitted through the distributed system connection (column 3, lines 25-64).

26. With regards to claim 11, Kinstler inherently teaches that the pre-determined signal conditioning circuitry is selected for the group consisting of monitor, interrupt, interrupt on demand, over-ride, or pass-through circuits, as the voltage levels must be monitored and passed through to the micro-controller (column 3, lines 33-36).

27. With regards to claim 18, Kinstler teaches a signal conditioning circuit card for interfacing a legacy I/O system and a distributed I/O system comprising at least one conditioning

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circuit (Fig. 1, elements 20, 14, and 22, column 3, lines 25-36), and inherently teaches the conditioning circuit is selected from the group consisting of: a monitor circuit, an interrupt on demand circuit, an interrupt circuit, an over-ride circuit, or a pass-through circuit, as the voltage levels must be monitored and passed through to the micro-controller (column 3, lines 33-36).

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

29. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,392,557 to Kreuter as applied to claims 1-3 above, and further in view of U.S. Patent 6,241,099 to Hendrickson et al.

30. With regards to claim 4, Kreuter fails to teach where the legacy system and the control system are part of a mail sortation system. Hendrickson teaches that mail sortation systems are well known in the art to include distributed computing systems that generate signals to a central unit (Figs. 1 and 13). It would have been obvious to one of ordinary skill in the art at the time of invention to use the override board of Kreuter within the mail sortation system of Hendrickson in order to create a opportunity for user override to disable a part of the machine for system maintenance.

31. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,831,926 to Kinstler.

32. With regards to claim 12, Kinstler does not explicitly teach the specific number of connections to be made with discrete signals. The examiner takes official notice that this was well known in the art at the time of invention. Kinstler does teach that IEEE-1394 was well known at the time of invention to be a bridgeable networking application (column 4, lines 13-40). The IEEE-1394 standard was well known at the time of invention to be expandable to the needs of a particular user application. It would have been obvious to one of ordinary skill in ~~the~~ ^{the} art at the time of invention that the plurality of discrete connections can be less than 16 discrete connections, depending on the needs of a user application. D.P. 7/30/05

33. With regards to claim 13, Kinstler does not explicitly teach the specific number of connections to be made with discrete signals. The examiner takes official notice that this was well known in the art at the time of invention. Kinstler does teach that IEEE-1394 was well known at the time of invention to be a bridgeable networking application (column 4, lines 13-40). The IEEE-1394 standard was well known at the time of invention to be expandable to the needs of a particular user application. It would have been obvious to one of ordinary skill in ~~the~~ ^{the} art at the time of invention that the plurality of discrete connections can range in number from 1 to 32 discrete connections, depending on the needs of the user application. D.P. 7/30/05

34. With regards to claim 14, Kinstler does not explicitly teach the specific number of connections to be made with discrete signals. The examiner takes official notice that this was well known in the art at the time of invention. Kinstler does teach that IEEE-1394 was well known at the time of invention to be a bridgeable networking application (column 4, lines 13-40). The IEEE-1394 standard was well known at the time of invention to be expandable to the needs of a particular user application. It would have been obvious to one of ordinary skill in ~~the~~ ^{the} art at the time of invention that the plurality of discrete connections can range in number from 1 to 32 discrete connections, depending on the needs of the user application. D.P. 7/30/05

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art at the time of invention that the plurality of discrete connections can be greater than 32 connections, depending of the needs of the user application.

35. With regards to claim 15, Kinstler does not explicitly teach the circuit card assembly operates on a 5 to 30 volt, direct current format. The examiner takes official notice that this was well known in the art at the time of invention. However, it was well known in the art to operate card circuitry on a 5 to 30 volt, direct current format. It would have been obvious to one of ordinary skill in ~~the~~^{the} art at the time of invention to operate card circuitry on a 5 to 30 volt, direct current format, to take advantage of commercially available power supply systems.

36. With regards to claim 16, Kinstler does not explicitly teach the circuit card assembly operates on an alternating current format of less than 250 volts. The examiner takes official notice that this was well known in the art at the time of invention. However, it was well known in the art to use an alternating current format of less than 250 volts to supply the power supply of a circuit card. It would have been obvious to one of ordinary skill in ~~the~~^{the} art at the time of invention to use an alternating current format of less than 250 volts, to take advantage of commercially available power supply systems.

37. Claims 9, 17, and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,831,926 to Kinstler as applied to claims 5, 10, and 18 above, and further in view of U.S. Patent 6,241,099 to Hendrickson et al.

38. With regards to claims 9, 17, and 19, Kinstler fails to teach where the legacy system and the control system are part of a mail sortation system. However, Hendrickson teaches that mail sortation systems are well known in the art to include distributed computing systems that generate signals to be sent a central unit for processing (Figs. 1 and 13). It would have been

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obvious to one of ordinary skill in the art at the time of invention to use the legacy signal conditioning board of Kinstler within the mail sortation system of Hendrickson in order to enable the continued use of legacy devices that generate discrete signals with modern high-speed equipment, and ^{avoid} ~~avoid~~ the cost of having to replace an entire system.

39. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over by U.S. 5,766,027 to Fogg as applied to claim 20 above, and further in view of U.S. Patent 6,241,099 to Hendrickson et al.

40. With regards to claim 21, Fogg fails to explicitly teach a mail sortation system comprising the legacy controller. However, Hendrickson teaches that mail sortation systems are well known in the art to include distributed computing systems that generate signals to be sent a central unit for processing (Figs. 1 and 13). It would have been obvious to one of ordinary skill in the art at the time of invention to use the legacy signal conditioning board of Fogg within the mail sortation system of Hendrickson in order to enable the continued use of legacy devices that generate discrete signals with modern high-speed equipment, and avoid the cost of having to replace an entire system.

Conclusion


41. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,304,934 to Pimenta et al teaches the conditioning the signals of a legacy Fieldbus device connected to computer. U.S. Patent 6,868,462 to Kolodziej teaches the connection of a legacy printer to a modern computer requiring the conditioning of signals. U.S. Patent 5,548,510 to Ebert et al. teaches a discrete signal processor in a card between a legacy device and a controller.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua D. Schneider whose telephone number is (571) 272-4158. The examiner can normally be reached on M-F, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on (571) 272-4083. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JDS



DOV POPOVICI
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